In the Claims:

1. (Currently Amended) A method for producing a decoy infrared signature to direct an incoming infrared guided missile away from an aircraft infrared signature and to the decoy infrared signature, the method comprising the acts of:

deploying a towed IR decoy during at least one aircraft flight time period including aircraft take off and aircraft landing;

powering the IR decoy by a laser source to produce a decoy infrared signature, wherein the produced laser source powered IR decoy infrared signature is of a magnitude greater than the infrared signature of said aircraft, and wherein said IR decoy infrared signature includes infrared energy in more than one spectral band;

~~producing the decoy infrared signature with the towed IR decoy, wherein the decoy infrared signature is brighter than the aircraft infrared signature produced by the aircraft, and wherein the decoy infrared signature is provided by fiber optic cables of various lengths; and~~

distributing the IR decoy infrared signature by means of a plurality of optical fibers of various lengths coupled to a

plurality of small apertures within the IR decoy;

detecting an incoming infrared guided missile with a warning system, and responsive to said detecting, further including the act of masking an infrared signature of at least one engine of the aircraft by causing a first amount of exhaust obscurant to be added into an exhaust stream of said at least one engine of the aircraft; and

retracting the towed IR decoy after the aircraft reaches an altitude that is beyond a range of an infrared guided missile or proximate the time immediately preceding or after the aircraft has landed.

2. (Currently Amended) The method for producing a decoy infrared signature to direct an incoming infrared guided missile away from an aircraft according to claim 1, wherein the act of retracting the towed IR decoy after take off is performed at approximately 10,000 feet.

3. (Currently Amended) The method for producing a decoy infrared signature to direct an incoming infrared guided missile away from an aircraft according to claim 1, further including ~~the acts of:~~

~~detecting the incoming infrared missile with a warning system; and responsive to said detecting act,~~ deploying the towed IR decoy when the warning system has detected the incoming infrared guided missile, and ~~for~~ retracting the towed IR decoy when the warning system is not detecting the incoming infrared guided missile.

4. (Cancelled)

5. (Currently Amended) The method for producing a decoy infrared signature to direct an incoming infrared guided missile away from an aircraft according to claim ~~4~~1, further including the acts of: repeating the detecting act to detect the incoming infrared guided missile with the warning system; and responsive to said repeated detecting act, increasing the magnitude of the decoy infrared signature~~intensity~~ of the towed IR decoy by rapid modulation of the laser source~~if the incoming infrared missile has been detected~~.

6. (Currently Amended) The method for producing a decoy infrared signature to direct an incoming infrared guided missile away from an aircraft according to claim 5, further including ~~responsive to~~

~~said repeated detecting act,~~ increasing the first amount~~density~~ of the exhaust obscurant added into said exhaust stream of said at least one engine of the aircraft in response to said detecting act ~~if the incoming infrared missile has been detected~~.

7. (Currently Amended) An aircraft system for producing a decoy infrared signature to direct an incoming infrared guided missile away from an aircraft infrared signature and to the decoy infrared signature, the system comprising:

~~an~~ towed IR decoy, for producing the decoy infrared signature;

a photonic source powering a plurality of fiber optic cables, said plurality of fiber optic cables having various lengths, each varying length fiber optic cable having a terminating point a predetermined distance from a terminating point of one or more other of said plurality of fiber optic cables, for directly radiating IR energy into the atmosphere from the termination points, wherein the various lengths of fiber optic cables and distance between said termination points provides said decoy infrared signature, wherein said IR decoy infrared signature is of a magnitude greater than the infrared signature of said aircraft, and wherein said IR decoy infrared signature includes infrared energy in more than one spectral band;

a warning system, for detecting an incoming infrared guided missile;

an aircraft engine obscurant system, responsive to said

detection of said incoming infrared guided missile from said warning system, for masking an infrared signature of at least one engine of said aircraft by causing a first amount of exhaust obscurant to be added into an exhaust stream of said at least one engine of the aircraft; and

a deployment and retraction device, for deploying and retracting the towed IR decoy proximate at least one time period including at least aircraft take off and aircraft landing.

8. (Previously Presented) The aircraft system according to claim 7, wherein the photonic source is a high power fiber laser.

9. (Currently Amended) The aircraft system according to claim 7, wherein the IR decoy includes a heat source~~heated elements~~.

10-13. (Cancelled)

14. (Currently Amended) An aircraft system of an aircraft for detecting and avoiding an incoming infrared guided missile, the system comprising:

a warning system, for detecting an~~the~~ incoming infrared guided missile;

a towed IR decoy, coupled to a laser source within the aircraft, for producing a decoy ~~an~~ infrared signature~~-~~, said towed IR decoy coupled to said~~decoy powered by a~~ laser source within the aircraft by way of a plurality of fiber optic cables, ~~after deployment from the aircraft~~ wherein said plurality of fiber optic cables have ~~having~~ various lengths, each varying length fiber optic cable having a terminating point a distance from a terminating point of one or more other of said plurality of fiber optic cables, for directly radiating IR energy into the atmosphere from the termination points, wherein the various lengths of fiber optic cables and distance between said termination points provides said decoy infrared signature, wherein said IR decoy infrared signature is of a magnitude greater than an infrared signature of said aircraft, and wherein said IR decoy infrared signature includes infrared energy in more than one spectral band;

a deployment and retraction device, for deploying the towed

IR decoy when the warning system has detected the incoming missile, and for retracting the towed IR decoy when the warning system is not detecting the incoming missile; and

an aircraft engine obscurant system, responsive to said detection of said incoming infrared guided missile from said warning system, for masking an infrared signature of at least one engine of the aircraft by causing a first amount of exhaust obscurant to be added into an exhaust stream of said at least one engine of the aircraft~~an engine mask, for masking an infrared signature of an engine of the aircraft~~.

15. (Cancelled)

16. (Currently Amended) The aircraft system according to claim ~~15~~14, wherein the additive is selected from the group consisting of oil, graphite-oil, multispectral water or ~~other IR blocking fluids~~a commercial oil smoke generator.

17. (Currently Amended) The aircraft system according to claim 14, wherein said fiber optic cables at various lengths provide an extended IR signature to produce said IR decoy infrared signature.

18. (Currently Amended) The aircraft system according to claim 14, wherein the towed IR decoy includes a heat source~~heated elements~~.

19. (Cancelled)

20. (Previously Presented) The aircraft system according to claim 14, wherein said laser source is a high power fiber laser.

21. (Cancelled)